



# Recognizing & Disconnecting Cable Connectors

Get to know the various kinds of cable connectors found inside consumer electronics, and learn to disconnect them safely.

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## INTRODUCTION

Modern electronics contain a dizzying array of internal data and power cable connectors—and nothing brings a project crashing to a halt like accidentally breaking a connector.

Use this guide to familiarize yourself with the most common types of connectors, and learn the tools and techniques you'll need to disconnect them.

1. [ZIF Connectors](#)
2. [No-Fuss Ribbon Cable Connectors](#)
3. [Flat-Topped \(Low Profile\) Connectors](#)
4. [Coaxial Cable Connectors](#)
5. [Display Cable Connectors](#)
6. [Other Ribbon Cable Connectors](#)
7. [Sliding Connectors](#)
8. [Power Cable Connectors](#)
9. [Bundled Cable Connectors](#)
10. [Glued-Down Cables](#)
11. [SATA Cables](#)
12. [Soldered Connections](#)
13. [Rare & Exotic Connectors](#)



### TOOLS:

- [Spudger](#) (1)
  - [iFixit Opening Tools](#) (1)
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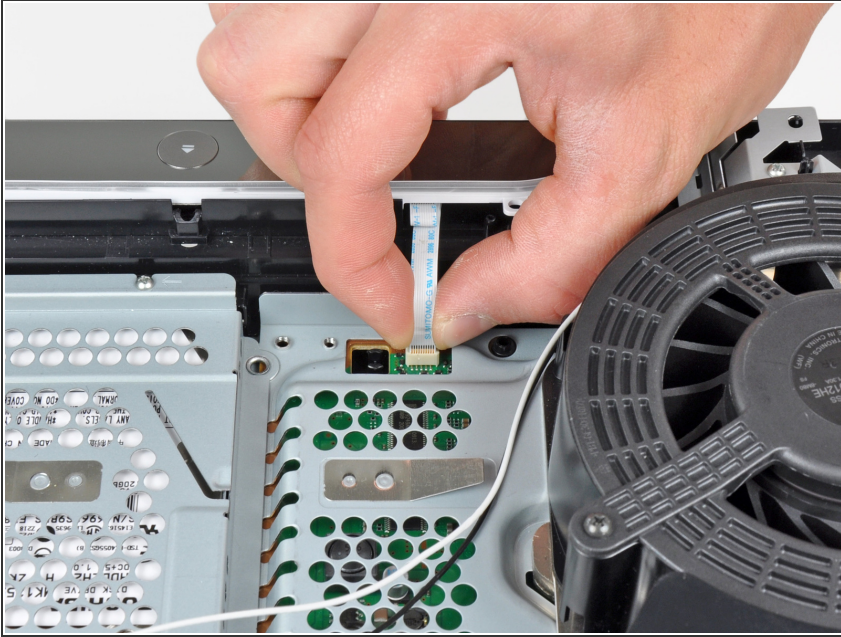
## Step 1 — ZIF Connectors



- The **zero insertion force (ZIF)** connector often causes trouble for beginners. ZIF connectors are used to secure delicate ribbon cables, such as FFC (flat flex cables) or FPC (flexible printed circuit) cables.
- ❗ As the name implies, no force is needed to plug in or remove the cable.
- To disconnect the cable, use the tip of a spudger or your fingernail to flip up the small locking flap. Then, you can safely pull the cable out.
- ⚠ Be sure to pry up on the hinged flap, not the connector socket.
- 📌 The white line on this ribbon cable marks the edge of the connection area. To reinstall, insert the cable into the connector up to this line, and then close the locking flap. If the cable doesn't insert easily up to (or very near to) this line, it's probably misaligned and needs to be gently removed and repositioned.



## Step 2 — No-Fuss Ribbon Cable Connectors



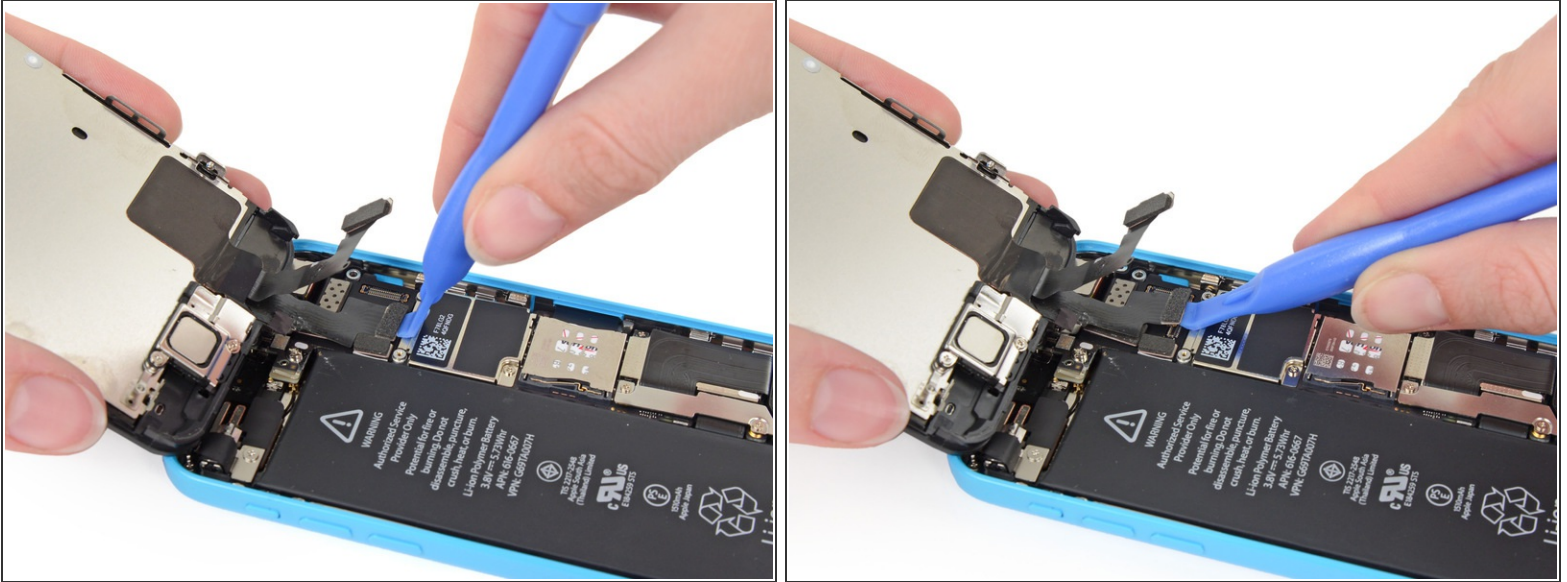
- Occasionally, you'll find a ribbon cable that simply pulls out of its socket, with no locking flap.
  - These kinds of connections usually secure sturdier ribbon cables, like this PS3 control board cable.
  - To disconnect the cable, pull it straight out of the connector.
  - ★ To reinstall the cable, hold it near the end and push it straight into the connector, being careful not to kink the cable.
- ⚠ These kinds of connectors are not as common, so check carefully for a way to release the connector before you resort to pulling on the ribbon cable.

### Step 3 — Flat-Topped (Low Profile) Connectors



- To disconnect flat connectors like this one, use a spudger to pry up each side. Then, lift the connector straight up from its socket.
- ☑ To reinstall, carefully position the connector, and then press it straight down until it snaps into its socket.

## Step 4



- i** Smaller press-fit (or "pop") connectors may require a simple flick with a plastic opening tool, spudger, or fingernail.

  - Place the flat edge of your tool under the edge of the connector, and pry the connector straight up from its socket.
- !** Be very careful to pry **only** under the flat edge of the connector, and not under the socket itself. If you pry under the socket, you will separate it from the logic board, causing permanent damage.
- ★** To reconnect, align the connector carefully over its socket and press down with your fingertip—first at one side, then the other—until it clicks into place.
- !** **Do not** press down on the middle until the connector is fully seated—if it's misaligned, the connector can bend, causing permanent damage.



## Step 5 — Coaxial Connectors



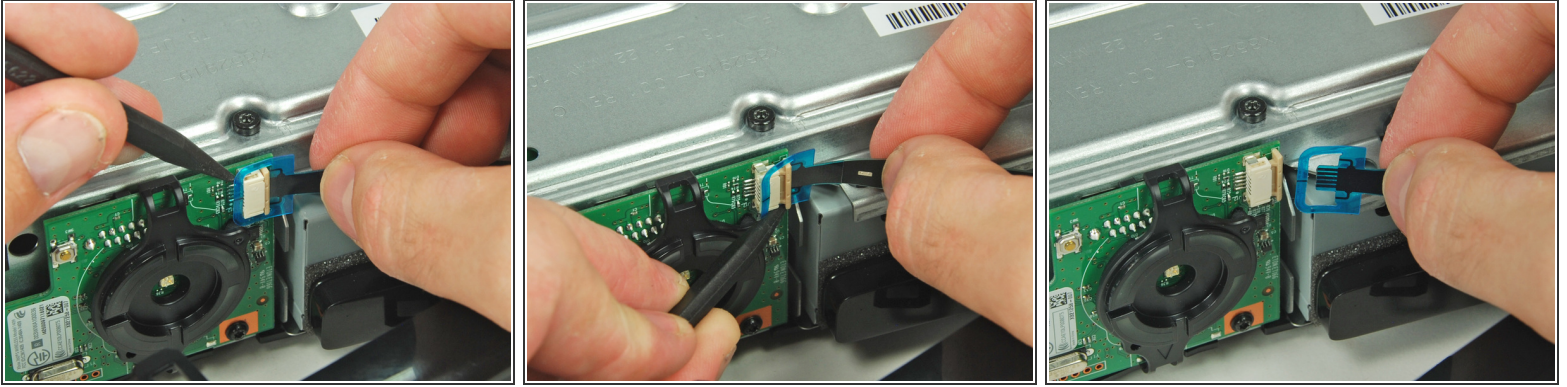
- For small coaxial connectors, like these U.FL antenna cable connectors, use a thin, ESD-safe pry tool to pry the connectors straight up from the board.
- ☑ To reinstall, hold the connectors in place and gently press them straight down. The connectors “snap” into their sockets much like the metal snaps on a jacket.

## Step 6 — Display Cable Connectors



- Display and camera cable connectors like this one sometimes have a small metal clip running around the back of the socket to lock them in place.
- To separate the connector, gently push the tip of a spudger under the clip. Then, swing the clip over to the other side of the socket, so that it lays flat against the cable.
- Holding the clip and cable together, gently pull in the direction of the cable to remove the connector from its socket.

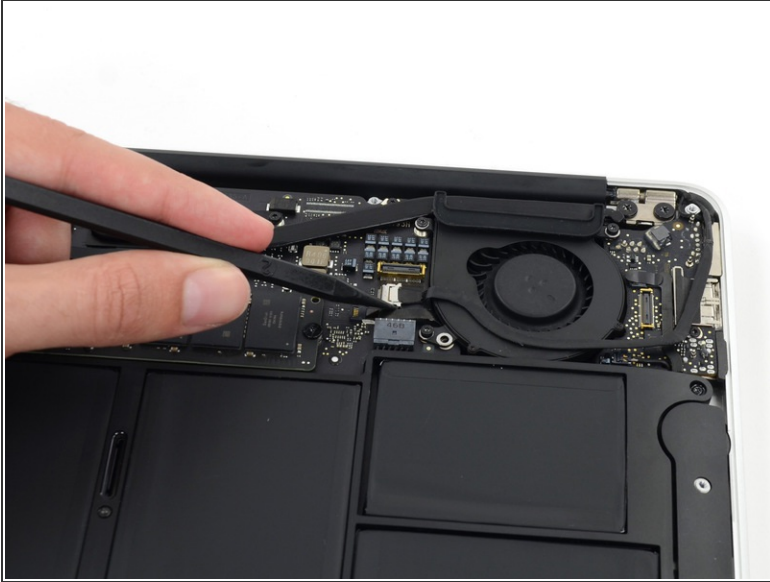
## Step 7 — Other Ribbon Cable Connectors



- Here's another type of ribbon connector, commonly found on Xbox gaming consoles.
- To remove it, use a spudger or fingernail to lift the clear blue tab away from the connector.
- Next, use the tip of the spudger to push open the plastic locking tab.
  - ❗ The locking tab will only move about 2 mm.
- Pull the ribbon cable out of the connector in the direction of the cable.



## Step 8 — Sliding Connectors



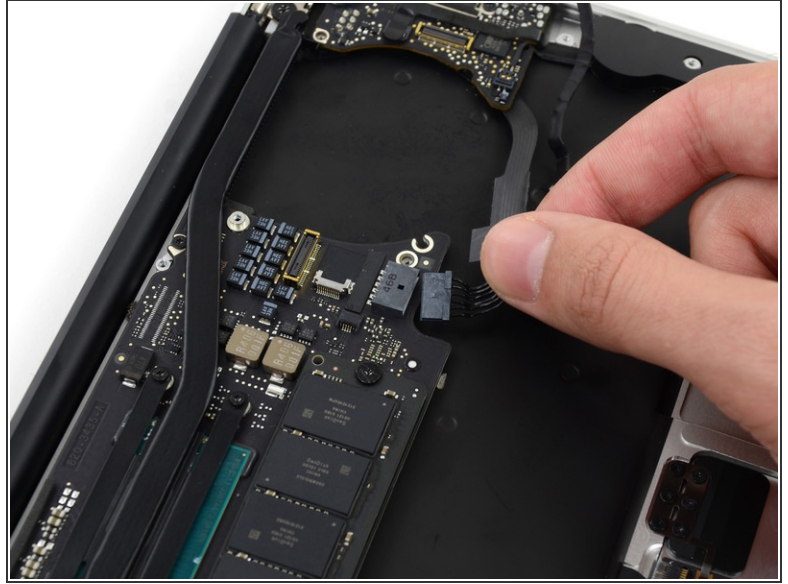
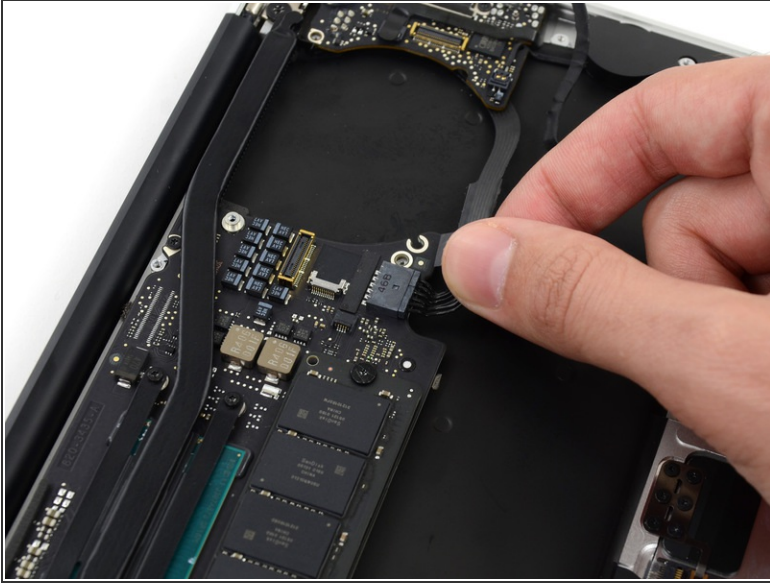
- Some connectors require a little coaxing before they'll give up their cables. This tiny iSight camera cable connector has no convenient place to pry or pull.
  - ⚠ At this point, some people give up and simply pull on the cable itself—which may work, but may also damage the cable.
- To disconnect it safely, use the pointed tip of a spudger to carefully push on each side of the connector.
- Alternating from one side to the other, gently “walk” the connector out of its socket.

## Step 9 — Power Cable Connectors



- Power cable connectors like this one have a small tab on the side that locks them in place.
- To separate the connector from its socket, squeeze the tab against the connector, and pull the connector straight up from the socket.

## Step 10 — Bundled Cable Connectors



- If you see a cable made up of lots of individually wrapped wires leading into a single connector, pulling on the cable itself may be the best method.
  - Pull the cable away from the connector in the same direction as the individual wires are running.
- ⚠ Pull evenly on the full width of the cable so that no individual wires are overly strained.

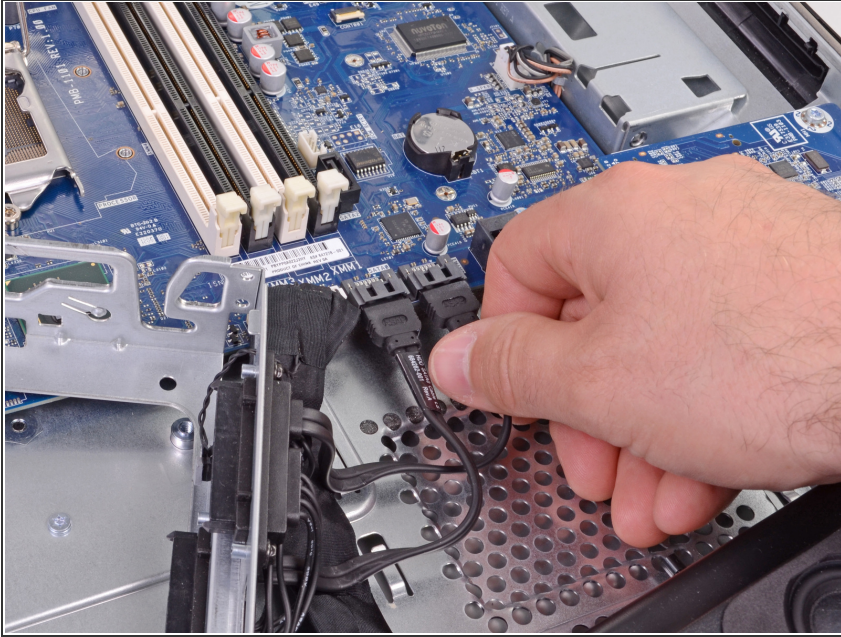


## Step 11 — Glued-Down Cables



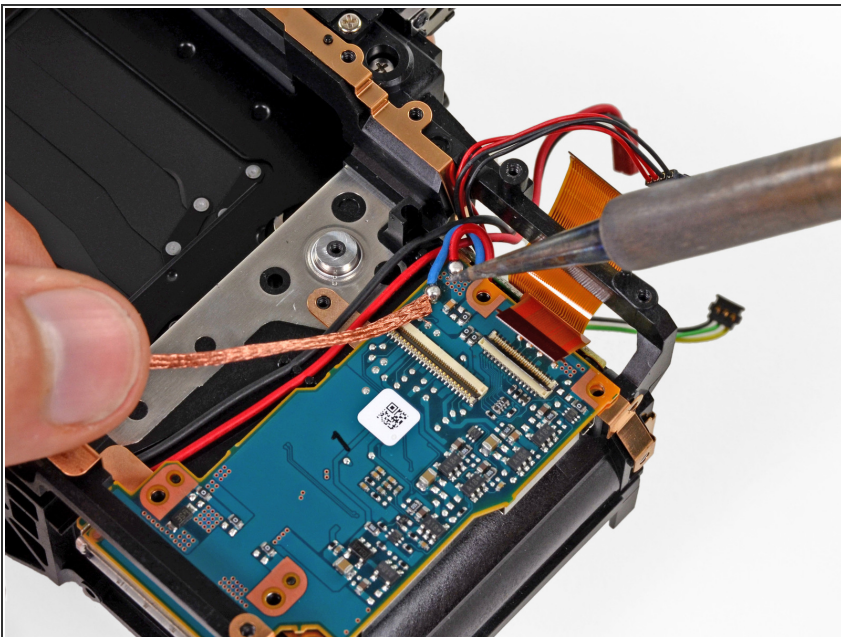
- Sometimes removing the connector from its socket isn't enough; an additional step or two is required to free up the cable. Here we have a Lightning port ribbon cable that is lightly glued into place.
- To remove it, carefully slide a spudger or guitar pick underneath the cable, freeing it from the adhesive.
- ⓘ For particularly delicate or stubborn cables, a little heat from a heat gun, hair dryer, or our handy [iOpener](#) will help soften the adhesive.

## Step 12 — SATA Cables



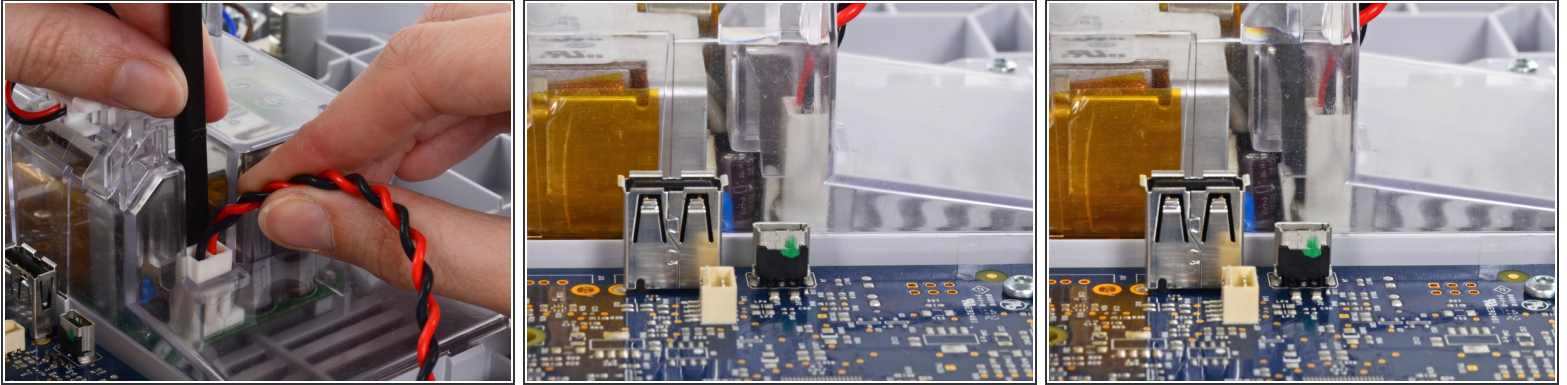
- Some common internal power and data cables, like these SATA cables, work much like the regular audio/video cables you already have around the house.
- To remove them, just pull in the direction of the cable.
- ❗ Some variants of the SATA cable have a small release tab or button on the side.
- Hold the tab down with your finger, and then pull to remove the cable.

## Step 13 — Soldered Connections



- You'll also encounter wires that weren't designed to be removed at all, and are in fact soldered into place.
- Not to worry—a soldering iron and some soldering wick makes quick work of these little guys.
- If soldering isn't yet your thing, head on over to our [soldering technique guide](#) and learn a new skill!

## Step 14 — Rare & Exotic Connectors



- Eventually, you're bound to come across a connector that you've never seen anywhere else.
  - Inspect the connector carefully, and try to determine how it comes apart.
- ⚠ Work slowly, using lots of gentle wiggling. If your first attempt doesn't seem to be working, don't force it. Try another approach or see if a different tool gives a better result.
- If you're still having trouble, search for guides for similar devices to see if they provide any clues, or ask for help in our [Answers](#) forum.

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